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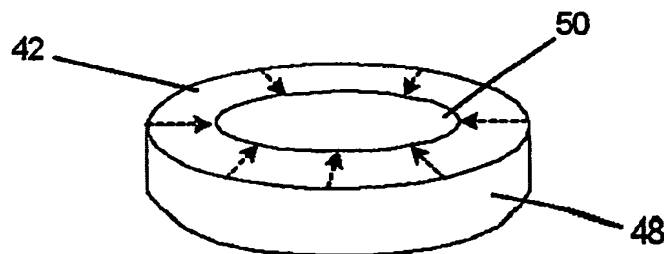
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(54) Title: **FREE-STANDING SILICON CARBIDE ARTICLES FORMED BY CHEMICAL VAPOR DEPOSITION AND METH-
ODS FOR THEIR MANUFACTURE**



(57) Abstract: Improved methods for manu-
facturing silicon carbide rings using chemical
vapor deposition. Cylindrical tubes are used as
deposition substrates and the resulting material
deposited on the inside surface of cylindrical
tubes or on the outside surface of cylindrical
mandrels, or both, is sliced or cut into the desired
ring size and shape. The resulting rings have
a crystal growth that is oriented substantially
planar to the finished article. The invention
also relates to nitrogen doped silicon carbide
material, as well as to silicon carbide structures
having axes of grain growth substantially parallel
to the plane of the structure and to each other,

and having rotational orientation that is substantially random with respect to the axes of grain growth of the grains.